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Atari Online News, Etc.
A-ONE Online Magazine
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A-ONE #0136

11/05/99

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-* Some States Still Lag In Web Access *-
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->From the Editor's Keyboard
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"Saying it like it is!"

Y'know, putting out an online magazine which includes Atari news, gaming news, and general computing technology news is hard week after week, but not overwhelming (most of the time). What is difficult to do, almost every week, is finding a topic for at least one of my two editorials! There are just some weeks when, no matter when I start to write an editorial, I come up with writer's block! This is one of those weeks! So, rather than ramble about absolutely nothing of significance this week, I'm just going to let you off with a simple 'have a great weekend'!!

Until next time...

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->A-ONE User Group Notes! - Meetings, Shows, and Info!
"~~~~~"

Atari Meeting in Portland, Oregon. USA

From: Benjamin Smith <bensmith@user2.teleport.com>

Please direct all replies through E-Mail at bensmith@teleport.com or atari@benjamin.net.

If you have an Atari and live in Portland, Oregon. U.S.A. or vicinity, you are cordially invited to attend a Meeting of the Portland Atari Club. You don't have to be a member to attend. We meet the 2nd Tuesday of each Month. Our Next meeting will be Tuesday, November 9th, 7 pm at the Pizza Baron at 2604 S.E 122nd Avenue in Portland, Oregon. Get together with other Atarians. Make friends, meet new people, maybe find an old friend. Eat Pizza, drink Pop or Beer in a decorative atmosphere. Bring your family to a family friendly place. For more info try:

<http://pac.pdxweb.net>

For more information or directions, please call our Vice President Ben Smith at (503)256-9974 See you there!

TAF FLEA MARKET November 17th - Bargain Time!

From: Daniel L. Dreibelbis <dreibel@idirect.com>

TORONTO ATARI FEDERATION FLEA MARKET NOVEMBER 17TH!

Yes, folks, it's time once again for users of the classic Atari 8-bit, ST, TT and Falcon computers to come to the annual event where you can divest yourself of what you don't need while at the same time hunt out for what you do! Sell your old stuff, discover a treasure!

Among other things you'll find at this event:

Classic systems! Looking for that Falcon? Wished you had an STe and its expanded capabilities? Do you need a 600XL for your collection? There's a good chance you'll find it here!

Hard-to-find games, peripherals, literature and applications!

TAF Software Library, carrying hundreds of PD/Shareware games, utilities applications, as well as the TAF Internet discs! Plus we'll be selling 720K floppy disks, stock up! The membership desk will also be up for renewals as well as new members.

The camaraderie of fellow Atari users - swap stories, troubleshoot, ask for advice! Meet some of the faces you've only read online on the Internet!

Ken Macdonald's demonstrations and sales of the various Mario Becroft adaptors for Ataris. Use a PC three-button mouse with the Mouse Adaptor, plug & play, works with Ataris and Amigas! Use a PC keyboard, PC mouse and Atari joystick with the amazing new QwertyX adaptor, no soldering required! Give your ST or STe amazing storage capacity with the Internal IDE Adaptor kit - program storage, add a CD-ROM, use an LS-120 internal drive to replace your disk drive! And, with the VGA Adaptor, use any VGA or SVGA PC monitor with your Atari ST to get a beautiful hi-res display!

All this and MORE!

It's a night of fun and commerce, and it's being brought on by the one, the only, Toronto Atari Federation - bringing you the best in Atari-related computer info and enjoyment since 1984! See you there!

Flea Market details:

Admission and tables for TAF members: Free
Admission for non-members - \$2.00 (one thin toonie)
Tables for non-members - \$5.00 (admission waived if you purchase a table.
NO STOLEN ITEMS OR PIRATED SOFTWARE ALLOWED! VIOLATORS WILL BE PROSECUTED TO THE FULL EXTENT OF THE LAW.

TORONTO ATARI FEDERATION meetings are held on the third Wednesday of the month from Sept-June in the "Gold Room" of the North York Memorial Hall located in the lower or concourse level of the North York City Centre Library Building at 5110 Yonge Street (next to Mel Lastman Square) at Parkholme Avenue. Those coming by public transport can take the TTC Yonge Line north to North York Centre Station. \$2 for non-members. Dues are \$25 per year, and includes a subscription to the newsletter PHOENIX. Membership in TAF IS Atari support!

Ken MacDonald, president: anarkist@idirect.com, 416-533-0504
Dan Dreibelbis, Vice-President: dreibel@idirect.com 416-766-4743
TAF Online! BBS (now free to any Atarian!) 416-421-8999 (28.8, 8-N-1)

TAF homepage - <http://taf.atari.org>

CinciClassic!

From: Michael St. Clair <mickster@one.net>

The organizers of CinciClassic are proud to announce the date and location of their 1999 collector's convention! CinciClassic aims to provide classic videogame collectors from the midwest and worldwide with a fantastic, non-profit event. We are proud to announce that, for the first time, convention admission will be absolutely free!

This year's event, celebrating all classic videogames, will be the weekend of November 5-7, 1999 at the offices of C/2 Interactive Solutions (thanks, C/2!) in Cincinnati Ohio.

Also new this year is a constantly updated web site detailing everything you need to know about the event, including news, hotel information and a page detailing requests to share rides and accommodations. Check it out at <http://ic.net/~craig/cinci/>

The first annual CinciClassic event, in 1998, was attended by over 25 people (this year we hope to have well over 40 people at a minimum), and attendee response was overwhelmingly positive. For pictures of the event, check our web site! Rare collectibles were auctioned off, great stories were told, scores of rare games were exhibited, tons of games were played (in tournaments and just for fun), and thousands of dollars of games were traded and sold.

News item: William Moeller has announced that he may be coming to the show to demo the INTV2PC hand controller, as well as the Intellivision Keyboard Component and the unreleased Colecovision game "Steamroller" (written by the author of BeamRider, David Rolfe)

News item: Current new Lynx games (PONX, Lexis, Sokomania, SFX) from Songbird Productions and others will be for sale at CinciClassic. Also, upcoming Jaguar games (Protector, Skyhammer) from Songbird Productions will be available for demonstration and play.

News item: Prizes and giveaways from Hasbro, Intellivision Productions, and others will be featured at CinciClassic.

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News item: William Cassidy will be on hand to demo the Odyssey 2 multi cart on Saturday.

If you can be in Cincinnati the weekend of November 5 - 7, and love playing and collecting classic videogames, you have got to come!

CinciClassic Final Update!

Only one more day until Friday, November 6 (opening night of CinciClassic)!
Response has been overwhelming!

This will likely be the final update. Check the web site or email us if there are any pressing questions.

Tentative Schedule (all times subject to change):

Convention hours:

Friday 7pm - 10pm

Saturday 9am - 10pm

Sunday 11am - 2pm

Extra late night gameplay likely for Friday and Saturday
Sunday is typically just packing up to go

Auction 4pm Saturday

Arcade tournament Saturday until the auction (mystery game)

Other tournaments 1pm - 4pm Saturday (Bomberman plus 1 or more mystery games)

Official web site: <http://ic.net/~craig/cinci/>

Phone number: (513)272-4000 (do not call before 6pm Friday)

Things you might want to bring: Power strips, small televisions, folding chairs. Classic games for playing, trading, demonstrating, and bragging.

Here are some of the latest news items

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News item: Many issues of Classic Gamer magazine will be given away.

News item: Several hundreds of dollars worth of tournament prizes donated by popular video game companies and private collectors will be given away.

Hope to see you there!

The CinciClassic Organizers

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PEOPLE ARE TALKING
compiled by Joe Mirando
jmirando@portone.com

Hidi ho friends and neighbors. This is yet another installment of "What the heck is he talking about now".

I truthfully don't have a clue as to what I want to say in this week's column. Hey, gimme a break. It happens. <grin>

Oh! I know! I'll share a piece or two of the email I've gotten recently.

Remember how we mentioned that Delphi will be dropping dial-in support as of the first of the year? And remember how I complained that the only two viable telnet programs on the Atari platform lacked the ability to upload and download?

Well, I hate to have to admit it (although you'd think that I'd be used to it by now), but I forgot about one of the available telnet programs for the Atari: Teli.

Dennis Vermeire emails me and tells me:

"Teli is able to up and download, it's a IConnect Client, so you need to install PPP Connect 1.7 and MagiC. It's written by Juergen Koneckzny, the guy who wrote Fiffi, Chatter, IFusion and is partly responsible for IConnect.

You can download the archive from <http://www.camelot.de/~zulu/index.html> its available in German and translated in English by yours truly ;-) I think that Teli is the most complete Telnet client available on our platform...

If you have a German PPP, you can get the English RSC files from our website, see signature...

Teli is shareware, if you like it you can register it.

dennis.vermeire@wanadoo.be <http://www.cix.co.uk/~derryck/index.htm>

PS: I don't know if you and Dana get much feedback about the magazine, but let me tell you that I look forward every friday evening when it lands in my mailbox. You're all doing a fantastic job.... thanks and keep it up!"

Now, normally I wouldn't have left the "ps" in the message, but I figured what the heck!.

Additionally, another well known name in the Atari world, Pascal Ricard, emails me and says:

"Teli (from Jorgen Koneckzny zulu@camelot.de) should do the trick (needs sz/rz for example). It works over PPPConnect (aka IConnect).

<http://www.camelot.de/~zulu/home.html>

Hope this helps."

Y'know, I've always heard from other writers, both in the Atari world and in other areas, that they either get no feedback, or that they get so little that it had might as well be none. I've been lucky I guess, but I'm pretty happy with the feedback I've gotten and with the general response to our humble offerings, first with STR, and now with A-ONE.

It's one thing when a newbie emails you and says "hey, thanks for the tip on <fill in the blank>; those newbies (and let's face it, we're all newbies at one thing or another) are the reason we do what we do. But when people like Pascal and Dennis take the time to drop a line, it kind of gives me one of those 'warm fuzzies' that people used to talk about. <grin>

Thanks to both Dennis and Pascal for their input. If you are a Delphi member and are fretting about what you're going to do for Delphi access in the new millennium, check out Teli.

Now, let's get to the posts on the UseNet!

From the comp.sys.atari.st Newsgroup

Brian Van Tilborg asks about the limitations of CAB:

"I am looking for information on if it is possible to view webpages that have Java? I am using Cab 2.7 demo and STing. I load a page and nothing comes up then I check the source and sure enough it mentions Java."

Matthias Jaap tells Brian:

"Don't confuse JavaScript with Java - two totally different languages. And the answer to your question is no. You may view the page but CAB won't display Java applets or use JavaScript.

There is no way around this at least not if you stick to CAB. Adamas can use JavaScript though."

Bob King posts:

"As far as I know, Java is a supposed platform independent 'add on' to HTML and Java script, is a language specific for one of the big two browsers, Netscape or Explorer enabling users of these/this to understand Java applets. Java needs a virtual engine (interpreter) built into the browser, the Atari systems are just too slow too even think of adding a virtual engine to CAB etc. Javascript, I think, being a much simpler subset of java, is just about usable with the high end ataris and Adamas has it.

If I'm wrong with the above, I'm sure some kind person, will put me/you right."

Matthias Jaap tells Bob:

"You don't need a browser or HTML to run Java. Java popularity grew with

the web but it can be used just like any other language.

Netscape invented JavaScript and it was called LiveScript at the beginning. Only marketing reasons caused the renaming of Netscape's script language to "JavaScript". Because they are the inventors Netscape sets the JavaScript standard. You can switch off JavaScript and still use Java applets and vice versa."

JavaScript is so simple that it has something in common with almost every language i.e. JavaScript has elements of Perl, C, Java and Pascal with the simplicity of Basic. JS doesn't consume much memory but it really depends on the script you use e.g. a script which preloads dozens of images is slow but generally the speed is not an issue.

At least I've not had any speed problems on my Falcon which I wouldn't call high-end.

Jeffrey Hostein asks:

"I have a Canon BJ 210 color printer and I haven't been able to print in color. Are there any programs to print gifs etc. on my MSTe? BTW if there are no drivers etc. for the Canon printers are there drivers etc. for any other printer type?"

Joe Villarreal tells Jeffrey:

"ImageCopy 4.x does a great job of printing in color. It should support the Canon. ImageCopy is a commercial program."

Kevin Dermott asks for emulator comparisons:

"I've just tried tosbox and quite impressed as it ran quite a few things MPC wouldn't. How does Gemulator compare? As far as I know there is no demo."

Roger Cain tells Kevin:

"Yup, TosBox is fine but it won't run Magic. There IS a demo (very few restrictions) of Gemulator on www.emulators.com. I am still struggling to get this to display properly on this PC but I think my problem is my graphics card (ATI) rather than the emulator."

Kevin tells Roger:

"I have Magic PC but as with MagicAT It won't run some early stuff Tosbox did. And a bonus: stuff that wouldn't work on a real tos 2.06 works on it. I downloaded the Gemulator demo three times I think it's faulty as it just goes to 400/800 emulation and wont even let me choose STe etc."

Veronica Lane posts:

"I just found this newsgroup & have a couple questions. I have an Atari 1040 STE that I used from 1989- 1993 to run EditTrak (MIDI program) for my band. I haven't used the machine in years, but I am wondering if there will be any problems with Y2K regarding either the computer or the software. I am very concerned about all the work I put into the songs & I don't want to loose the ability to play them in the future. Can anyone help me?"

"Your MIDI program and STE will run fine after 2000, so nothing to panic about."

Matthias Jaap adds:

John Whalley tells Veronica:

<http://www.whalley.demon.co.uk/atari/y2k.html>

"I would like to change my DD external disk drive to a high density drive, do I need a specific type of high density drive or can I use any type of PC drives? Are there any jumpers that need to be set? The internal drive is high density and works very nicely.

Joe Villarreal tells Paul:

Well folks, that's it for this week. Tune in again next week, same time, same station, and be ready to listen to what they are saying when...

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->A-ONE's Game Console Industry News - The Latest Gaming News!

Midway Delivers Paperboy

Coin-Op Classic Arrives for Nintendo 64

America's favorite paperboy is making headlines again! Midway Home Entertainment Inc., one of the industry's leading video game publishers and developers, Thursday announced that an updated, 3D version of the coin-op classic Paperboy for the Nintendo 64 game console is available nationwide. A Game Boy Color version is currently available.

"Paperboy has long been a coin-op favorite and now, with the release of Paperboy for the Nintendo 64 and Game Boy Color, Midway is bringing the game to a whole new generation of gamers," said Paula Cook, director of marketing for Midway Home Entertainment.

In Paperboy, good old Mr. Daily needs help. Mr. Daily is the owner of the Daily Sun, the oldest and most respected paper in town. Unfortunately, in the last few years an unscrupulous competitor has moved in, and by stealing subscribers, has threatened to put the Sun out of business. Only Paperboy, whose bike riding and newspaper tossing skills are unmatched, can save the day. By increasing the subscription rate to 75% across the all-American community of Centreville, the Daily Sun will once again be the town's number one source of news.

Gamers' newspaper-tossing skills are tested in over 25 levels, such as Alice's RV Haven and Raybob's Junkyard, each featuring secret areas and hidden tracks. Along the way, a ton of obstacles, including cacti, cows, skunks and pelicans, impede players' progress. As digital paperboys and papergirls struggle to stay on their bikes, they attempt to pull off a variety of aerial stunts that can improve their score.

Rockstar Games Ships Earthworm Jim 3D for the Nintendo 64

Rockstar Games, a division of Take-Two Interactive Software, Inc., announced Thursday that Earthworm Jim 3D has shipped and is wriggling its way onto retail stores shelves this week. As one of the most popular 2-D platform characters ever on the 16-bit Super Nintendo Entertainment System, "America's Favorite Earthworm Super Hero" has finally returned to video game consoles in his first 3D platform adventure ever for the Nintendo 64. Developed by Vis Interactive, Earthworm Jim 3D takes gamers on wild and wacky adventure through Earthworm Jim's demented mind in a battle for his sanity against all of his classic arch-enemies including Psy-Crow, Fatty Roswell, Professor Monkey-for-a-Head, Bob The Goldfish as well as the usual cast of evil cows, chickens, and zombies!

"We are excited to finally bring Earthworm Jim into the world of 3D in his very own platform adventure for the Nintendo 64," stated Sam Houser, president of Rockstar Games. "Fans of the Earthworm Jim series will be

happy to know that all the fun of Earthworm Jim's signature humor, moves, characters, and game play is still here and looking better than ever on the Nintendo 64!"

Gamers Republic magazine describes Earthworm Jim 3D as ``quite simply, one of the most original, entertaining, and funny 3D action/adventure/platform games you're likely to ever play on the Nintendo 64."

IGN64.com states, ``Earthworm Jim 3D brings the classic 2D formula of the franchise screaming into the third dimension."

Earthworm Jim 3D for the Nintendo 64 takes the one of the most beloved video game characters ever to the next level. Spanning 4 sections of Jim's brain and 15 levels to conquer in a battle for Earthworm Jim's sanity, players must try to rescue Jim's consciousness from a coma in which he has lost all his marbles as all of his evil rivals try to take advantage of the situation. The end result is an insane Earthworm Jim adventure that takes all the classic elements of the video game franchise which spawned a wildly successful television cartoon series and a line of toys and action figures and transformed it into one of the most fun, colorful, addictive, and long-awaited 3D platform adventures of this upcoming holiday season.

Infogrames North America Goes Ballistic On PlayStation and Game Boy Color

The New Addictive Puzzle Game Spirals Into Stores This Week

Infogrames North America announced this week the shipment of Ballistic for the Sony PlayStation and Nintendo Game Boy Color. Warning: Ballistic has been known to be the cause of hours of fun, irrepressible laughter, enjoyable frustration and is sometimes accompanied by an uncontrollable need to whack your opponent in the arm.

Ballistic requires players to protect the center of the ``loop" from a never ending flow of brightly colored balls which feed onto a spiral-shaped belt that converges in the middle. If a ball reaches the center of the loop, the game is over. Players aim a rotating turret and shoot a ball into a chain of balls. In order to eliminate balls and relieve pressure from the constantly converging chain, players must create combinations of three balls or more of the same color. Exclusive to the PlayStation version, special bonus balls including smart bombs, tornadoes, and bumblebees are used to destroy all the balls on the screen of the same color. This allows for unique gameplay throughout the various levels.

``Ballistic is one of those incredibly addictive puzzle games that you just can't put down," said Rick Reynolds, director of product marketing for Infogrames North America's I-Heroes Label. ``Easy to learn and irresistibly fun gameplay make Ballistic a must-have for all ages this holiday season."

The PlayStation version of Ballistic features three modes of play: Panic Mode, a continuous game where players see how many stages can be completed; Stage Mode, a timed game where players must complete the game in stages, resulting in a time bonus award based on how fast a stage is cleared; and Vs. Mode, a two-player head-to-head battle, which uses split-screen play on the PlayStation.

Four modes of play are included in the Game Boy Color version: Panic Mode, a continuous game where players see how many stages can be completed;

Checkmate Mode, where players are given a certain number of balls to solve individual puzzles; Time Trial Mode, where players are timed to see how quickly they can eliminate 200 balls; and Vs. Mode, where two players can compete head-to-head via a link cable and two Game Boys.

Developed in Japan by the Mitchell Corporation, Ballistic supports Dual Shock controllers on the PlayStation and is compatible for both Game Boy and Game Boy Color. Ballistic can be found at most major retail outlets at an estimated retail price of \$29.99 for PlayStation and \$19.99 for Game Boy Color.

Taito's Psychic Force 2012 Set To Blow Gamers' Minds On Sega Dreamcast

Acclaim Entertainment, Inc. announced it is distributing the Sega Dreamcast version of Taito's anime-style 3D fighter, Psychic Force 2012. The game is scheduled to ship November 9, under the Acclaim Distribution, Inc. label.

"Psychic Force 2012 features stunning graphics and original gameplay unlike any other Dreamcast fighter," said Thomas Bass, marketing manager at Acclaim Entertainment. "This unique 3D fighter couples the popularity of anime with exciting gameplay, proving to be an ideal match for our target Sega Dreamcast audience."

In Psychic Force 2012, players take control of up to thirteen psychic warriors and square off in a 360-degree floating arena suspended high above city skylines. Players can move their characters anywhere within the arena and use both short-range hand-to-hand attacks and long-range powerful psychic blasts. Each character specializes in the control of a certain element. For example, the renegade psychic warrior Emilio controls light, and the fiery female warrior Regina uses her mastery of fire in her effort to create a psychic utopia.

"Psychic Force 2012 allows gamers the largest range of movement of any 3D fighter available," said Jason Vandehey, producer at Acclaim Entertainment. "Gamers can attack and defend while moving their characters up, down, backward and forward. This versatility combined with its stylistic anime graphics allows Psychic Force 2012 to stand apart from other fighting games."

Spyro -2- : Ripto's Rage! Charges Onto Playstation Game Console Just in Time for the Holidays

Sony Computer Entertainment America announced the release of the highly-anticipated Spyro (2): Ripto's Rage!, now available at retailers nationwide exclusively for the PlayStation game console.

The immensely popular Spyro is back with all new moves and a fresh attitude, ready to take on a host of challenging new adventures just in time for the holiday season.

In Spyro (2): Ripto's Rage!, the sequel to the top-selling, original PlayStation franchise Spyro the Dragon, we find Spyro on his way to Dragon Shores for a well-deserved vacation. Much to his chagrin, Spyro is instead catapulted into the World of Avalar, a land once filled with peace and

harmony, now overrun with darkness and fear as a dinosaur-riding troublemaker Ripto makes life miserable with his magic spells. If Spyro is to ever reach his dream vacation destination, he must save all of the helpless inhabitants, restore order to Avalar and ultimately rid that world of the wicked Ripto. Spyro's journeys take players through a series of diverse and challenging new adventures covering 30 fantastical 3D worlds, each with its own unique theme and appeal. To complete each challenge, the clever purple dragon boasts all new moves, including Swim, Climb, Headbash, Supershot, pick up and Spit rocks, Superfly, Supercharge and more.

Spyro (2): Ripto's Rage! challenges gamers with intriguing primary, secondary and bonus tasks that include puzzles, mini-games and hidden areas, heightening the gaming experience. These tasks can vary from somewhat simple to extremely complex, and include speed, dexterity and puzzle challenges. Beginning players can choose to play through the game completing only the primary tasks, while advanced gamers can opt to take on the secondary and bonus tasks, earning special Orb rewards. Although these Orb challenges are not mandatory to progress to the next level, they are essential for full completion of the game, adding a deeper level and wider variety of gameplay. Players who complete 100 percent of the game will be generously rewarded with a surprise.

'With the original Spyro the Dragon game, we found that gamers of all types enjoyed the mischievous lead character, quirky humor and unparalleled graphics that the game offered," said Ami Blaire, director, product marketing, Sony Computer Entertainment America. 'With Spyro (2): Ripto's Rage!, we brought back these favorite features, while completely enhancing the gaming experience with all new character moves, larger 3D worlds, and more challenging, varied gameplay. Spyro (2): Ripto's Rage! offers exciting and immersive gaming for players of all skill levels."

Fun, Nostalgia and Multiplayer Warfare Collide in Toy Commander for Sega Dreamcast

This is war! Suit up, grab your favorite toy and report for duty! Sega of America announced Thursday that 'Toy Commander" is currently available for the 128-bit, Internet-ready Sega Dreamcast videogame system.

This innovative air and land toy warfare game takes place in a vibrant storybook-style house with fully explorable 3D rooms. Packed with more than 50 hours of gameplay, four-player multiplayer action and intense missions, gamers 'go small" as they are challenged to battle rebellious toys that are wreaking havoc about the house. Players will be filled with nostalgia as they race through the game and uncover toys from their past and many other surprises. 'Toy Commander" is available at retailers nationwide for \$49.95.

Developed by the European-based No Cliche, 'Toy Commander" begins with an eight year-old boy named Andrew Gunthy, who plays with his toy airplanes, tanks and helicopters. Suddenly, his old toys have rebel and it is up to Andy and gamers to prove they are the true 'toy commander" by completing numerous exciting missions to defeat the rogue toys. Gamers will have full reign of the totally explorable rooms to complete their missions fly in and out of mom and dad's room, explore under the bed via a tank or zoom around the room looking for the enemy who is taking cover behind the toy box.

'Toy Commander' is a breakthrough title for Sega Dreamcast," said Greg

Thomas, vice president of product development, Sega of America. "The 'miniaturized' gameplay elements and environments provide a unique and nostalgic experience, while delivering real action to gamers of all ages."

One of the most entertaining aspects of "Toy Commander" is the variety of toys that players must utilize for defense or means of transportation. Players must use a variety of vehicles including planes, trucks, tanks, jeeps and helicopters, each with its own special abilities. Watch out! Planes can be armed with weapons including pencil missiles or eraser bombs. Although players control toys, the intense gameplay is very real, as plastic military vehicles come to life with devastating firepower and explosive combat abilities. These vehicles become critical for completing missions.

The 40 humorous and clever missions in "Toy Commander" require gamers to think strategically and use the tools (and toys!) they are given. Players are challenged to do anything from kill an evil cockroach lurking in the toilet pipes to drop eggs into a pot on the stove to make hard boiled eggs. Don't be fooled, these missions require lots of creative problem solving! For example, in order to boil the eggs, the stove must be turned on, and players need to use the tank to shoot at the stove controls to get it blazing. The eggs need to be rolled off a platform into the pot, so gamers must strategize on which would be the best vehicle for the job.

Up to four players can battle it out via split screen in these different multiplayer modes with a wide range of 30 different vehicles to choose from. The deathmatch lets players fight it out until the finish; "cat and mouse" challenges one player to avoid all other players; and in "capture the flag," gamers need to go to an opponent's headquarters they set up in the house, grab their flag and bring it to your base to win.

Electronic Arts Ships Knockout Kings 2000 for the PlayStation

Electronic Arts Tuesday announced that it has shipped Knockout Kings 2000 on the PlayStation video game system. Knockout Kings 2000 is the only boxing game that allows fans of the "sweet science" to play as the legendary fighters who built the sport. This year Joe Frazier joins fellow boxing greats Muhammad Ali, Sugar Ray Leonard, Evander Holyfield, Lennox Lewis and Oscar De La Hoya to headline the incredible lineup of 50 boxers. New face wrap technology makes the boxers in the game come to life and look totally authentic.

Last year's Knockout Kings on the PlayStation became the best selling boxing video game in the history of the industry, according to TRSTS Video Game Report, published by the NPD Group. Knockout Kings 2000 is currently available on the Nintendo 64 and will ship on the Game Boy Color later this fall.

WBC Heavyweight Champion Lennox Lewis, who will square off against Evander Holyfield next week in Las Vegas, has been playing Knockout Kings 2000 for some pre-fight strategizing. "On November 13 I plan on taking the championship belts that are rightfully mine," said Lewis. "I've been playing Holyfield in Knockout Kings 2000 and I am destroying him. I've been trying out a lot of different game plans against Evander and they all seem to be working. It's giving me a taste for our rematch, and I like what I see."

The PlayStation version of Knockout Kings has a number of features that distinguish it from the competition. A classic fight mode allows the user to relive the biggest and most famous fights of all time, such as Ali vs. Frazier, Duran vs. Leonard, and Sugar Ray Robinson vs. Jake Lamotta. It is possible to train in some of the most famous gyms, and fight in the most well known venues in the world. An interactive training mode teaches the gamer how to play Knockout Kings 2000 by showing how to throw and block punches, as well as move around the ring. How well a boxer performs in the gym affects his performance in a real fight.

The complete roster of boxers in Knockout Kings 2000 includes Muhammad Ali, Alexis Arguello, Frank Bruno, Hector Camacho, Oba Carr, Julio Cesar Chavez, Oscar De La Hoya, Jack Dempsey, Roberto Duran, Eric "Butterbean" Esch, Joe Frazier, Michael Grant, Marvin "Marvelous" Hagler, Larry Holmes, Evander Holyfield, Ingemar Johanson, Mark "Too Sharp" Johnson, Kevin Kelley, Jake Lamotta, Mills Lane, Sugar Ray Leonard, Lennox Lewis, Sonny Liston, Danny "Little Red" Lopez, Joe Louis, Ed Mahone, Ray "Boom Boom" Mancini, Angel Manfredy, Rocky Marciano, Floyd Mayweather, Barry McGuigan, Bronco McKart, Archie Moore, Erik Morales, "Sugar" Shane Mosley, Carlos Navarro, Ken Norton, Sean O'Grady, Floyd Patterson, Pedro Pena, Aaron Pryor, Ike "Bazooka" Quartey, David Reid, Sugar Ray Robinson, Danny Romero, Earnie Shavers, Leon Spinks, David Tua, Fernando Vargas and Pernell "Sweet Pea" Whitaker.

"Knockout Kings 2000 is a completely different experience on the PlayStation than it is on the Nintendo 64 or Game Boy Color versions," said Michael Pole, senior vice president and executive in charge of production, Electronic Arts. "The simulation aspects of this game are what make it second to none. We set out to create the ultimate boxing game for the purist who loves the sport, and we have delivered."

Each fighter has a biography in the game that educates the gamer as to what made the boxer famous and talks about their fighting style. With the ability to throw hooks, jabs, crosses, uppercuts, body punches, and special counter punches, it is possible to fight any kind of style in the ring. There are also 12 different kinds of combination punches that can be thrown to help pummel an opponent into submission.

Each boxer's style, strength, weight, height, speed, reach and stamina are factored into the artificial intelligence to ensure a realistic boxing experience. Also included are the intangibles that make a boxer great, such as the will to win. Knockout Kings 2000 factors in a boxer's "heart" to gauge that will, as well as how easily a cut can open on his face.

An enhanced "create-a-boxer" feature allows the user to create a boxer with specific fighting skills and a very distinctive look. With the ability to choose hair style and color, facial hair style and color, trunks, height, weight, shoes, gloves, nickname, signature moves, and other attributes, the create a boxer feature enables a user to customize a boxer however they desire. That created boxer can then be taken through the ranks in career mode in three different weight classes. In each weight class, including light, middle, and heavyweight, he will have to fight 10 fictional boxers and 10 licensed boxers to gain the championship belt. He then will have to fight other licensed boxers to retain the belt, and those championship caliber opponents are the true titans of the sport.

Famous referee Mills Lane worked with EA SPORTS(TM) on the game to give his expert opinion on the strengths and weakness of current and past fighters. The broadcasting element of Knockout Kings 2000 helps immerse the user in the boxing experience. Jimmy Lennon, Jr, makes ring announcements and

introduces the fighters. Sean O'Grady and Al Albert provide play-by-play commentary, and Lane gives the boxers pre-fight instructions.

Dynamite Cop for Sega Dreamcast Brings Fully Interactive Arcade Fighting Action Home

Terrorists have kidnapped the President's daughter and it's your mission to battle through throngs of thugs to save her life in ''Dynamite Cop" for the 128-bit, Internet-ready Sega Dreamcast videogame console. ''Dynamite Cop," the sequel to the arcade hit ''Die Hard Arcade," features intense arcade fighting action, fully explorable 3D environments and more than 100 non-traditional weapons (including a rack of beef!) for the ultimate adrenaline rush. As an added bonus, the game has additional stages and a mini game, which is exclusive to the Sega Dreamcast version. ''Dynamite Cop" is available at retailers nationwide today for \$49.95.

In ''Dynamite Cop," players assume the role of special agents Bruno Delinger, Jean Ivy and Eddie Brown, each with a unique and varied set of special moves and combination attacks. To make their rescue, they must engage the enemy in combat on both land and sea. But this won't be easy, Sega Dreamcast is smart. It learns players' favorite attacks and works to counteract them - especially if gamers use the same moves again and again. Consequently, players are challenged to learn a wide range of fighting techniques to win.

Traditional action/fighting games of the past look boring compared to ''Dynamite Cop," which is packed with hysterical fighting elements. Players can utilize a large fish, a piece of sushi or anything in the fully interactive environments as a weapon. To add to the entertainment-value of the game, characters will lose articles of clothing as they are hit, until their combat suit is practically their birthday suit!

''Dynamite Cop' is a perfect arcade title to bring home because of the wide range of possibilities given to gamers with the interactive environments, the weapons and the new features for the home version," said Greg Thomas, vice president of product development, Sega of America. ''Sega will continue to bring its best arcade properties to the home with the 'extras' that gamers enjoy to expand gameplay even further."

Key additions and enhancements have been made to the Sega Dreamcast version of ''Dynamite Cop." There are three new missions and two exclusive modes - Versus and Survival. In the Versus mode, players go head-to-head against a friend and in Survival mode gamers are challenged to play until they've depleted their health. As an added bonus, a ''Tranquilizer Gun" mini game (an arcade game from the '80s) and an Illustration Gallery filled with more than 200 illustrations of characters can be accessed by players.

The Visual Memory Unit (VMU) for Sega Dreamcast is a perfect vehicle for giving gamers more ways to play. In ''Dynamite Cop," players are treated to extras including new weapons, more character illustrations and a bonus character taken from ''Die Hard Arcade" that can be downloaded from the Sega Dreamcast Network, accessible only through Sega Dreamcast. These extra elements are bundled together under the name ''Detonator Pack" and can be downloaded prior to starting a game.

''Dynamite Cop" is currently available at retailers nationwide and at sega.com for \$49.95.

Namco Sues in Baseball Row

Namco has filed a lawsuit against Konami, claiming it released a mini-game in a baseball title that was in violation of an existing patent. The software in question is a baseball game released last July for PlayStation. It features a mini-game that users can play while they wait for the actual game to load. Namco claims this violates a patent it registered in January '98.

The Nihon Keizai Shimbun reports that Namco is seeking a court ruling that would stop Konami from producing and selling the program. This isn't the first time the Japanese giants have had to see each other in court. Konami recently applied to the Tokyo District Court seeking an injunction that would force Namco to suspend production and sale of its Guitar Jam title, also due to patent infringement.

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->A-ONE Gaming Online      -          Online Users Growl & Purr!
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Jaguar Update from Songbird

*** PRE-ORDER SPECIALS END TODAY (NOV 1) ***

Songbird Productions
<http://songbird.atari.org>

Songbird Productions is your leading supplier of new and hard-to-find products for the Atari Lynx and Jaguar. Jaguar fans have responded enthusiastically these past few weeks and pre-ordered the upcoming games -- Skyhammer, Soccer Kid, Hyper Force, and Protector.

Any pre-orders received or postmarked by Nov. 1st will qualify for pre-order pricing and specials. You can still pre-order three of the four upcoming games beyond today -- however, you will not be eligible for the pre-order pricing and specials.

*** SCHEDULE CHANGE: HERE COMES PROTECTOR! ***

The release schedule has been rearranged, resulting in Protector being moved up to the 12/20/99 release date, and Skyhammer being placed at the 05/08/00 release date. Hyper Force and Soccer Kid are unaffected.

Songbird is aware that many fans are eagerly awaiting the release of Skyhammer, and this game is still definitely committed to release. The reason for the schedule adjustment is simply a matter of cost. Original quotes from electronics vendors several months ago were 30-40% lower than what they are currently. This rise in cost makes it much more difficult to release Skyhammer at the committed price point, so as a result Songbird

plans to ride out the temporary increase in component cost and purchase these parts in early 2000 when hopefully the prices have declined.

Your patience and understanding is appreciated in this matter. Songbird is releasing a total of four new games for the Jaguar over the next 7 months, and the costs and risks involved are significant.

Songbird also recognizes some customers may have pre-ordered only Skyhammer because it was the first game in the release schedule. If this applies to you, and you would now like to switch your pre-order to Protector instead, simply email Songbird at songbird@atari.org indicating your desire, and we will gladly accommodate the switch.

Protector is an exciting 2D bidirectional shooter that has been a surprise hit with many Jaguar fans at JagFest '99 and CGE '99. Songbird is confident that this game is an excellent kickoff to the release schedule.

*** ORDERS NOW ACCEPTED FOR PROTECTOR ***

Due to the change in schedule, Songbird is now accepting full orders for Protector, which will be released on 12/20/99. The retail price of Protector for new orders is \$74.95 plus shipping.

If you pre-ordered Protector, you will owe a balance of \$44.95 plus shipping. If you pre-paid by credit card, you will need to authorize payment of the balance on your card or supply a different card number. Please contact Multimedia 1.0 again to complete your order, or email Songbird with your complete order, customer information, and credit card number. Payment by check or MO in US Dollars is also always accepted.

Please email Songbird at songbird@atari.org with any questions. And a big thank you to every Jaguar fan who has pre-ordered one or more of the upcoming games.

Sincerely,

Carl Forhan
Songbird Productions
<http://songbird.atari.org>

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A-ONE's Headline News
The Latest in Computer Technology News
Compiled by: Dana P. Jacobson

IRS Acknowledges Problems In Y2K Preparation

The Internal Revenue Service has told Congress it has experienced some "trouble spots" in preparing for the Year 2000 computer problem, although it is working on contingency plans and could manually issue some tax refunds.

In a letter sent earlier this month to House Ways and Means Committee Chairman Bill Archer, the IRS said its records of equipment and software at its offices around the country posed a high risk to its Y2K preparation efforts.

IRS Commissioner Charles Rossotti wrote that visits to the Atlanta and Philadelphia Service Centers and the Philadelphia and Pittsburgh field offices had revealed both strengths and weaknesses in the inventory records.

"The quality of the IRS's inventory currently poses a high risk to the Y2K effort," he said in the letter dated Oct. 15.

Some computers and software withdrawn from service were still in the database while other equipment being used was not recorded.

"While there is always an element of risk, and we do have some trouble spots in our effort toward becoming Y2K compliant, I am confident we will be prepared for the Year 2000," Rossotti wrote to Archer, a Texas Republican.

A coding glitch could cause older computers and software to mistake the 2000 date rollover as 1900 come Jan. 1 unless the machines are fixed or replaced.

The IRS Commissioner stressed that the agency's returns processing systems, both paper and electronic, had been made Y2K compliant and successfully undergone so-called end-to-end tests in which all parts of the system work together.

But there is no alternate IRS system to process returns or issue refunds in the event of a Y2K failure, Rossotti said.

The 10 IRS service centers combined could produce up to 10,000 manual refunds daily and would be issued to taxpayers most in need.

If manual refunds were issued, Rossotti said, they would go first to taxpayers with IRS-approved taxpayer assistance orders, then to people with gross incomes of \$10,000 or less, and then increasing in increments of \$5,000 depending on the ability to issue the manual refunds.

Some States Lag In Web Access

California, home of Silicon Valley, provides the fewest computer terminals for its students. The District of Columbia, in a region through which 65% of global Internet traffic flows, offers schoolchildren the worst access to computers that can surf the World Wide Web.

And new teachers are no more likely than veteran peers to know how to teach with computers, and less than one-fifth of the dollars schools spend on technology goes to train them.

An annual report on school technology released Tuesday said while the number of school computers has doubled since 1993 to 8 million nationwide, many states lag in access they provide students. Furthermore, the report said, if classroom computers are going to make a difference, the nation must focus on training teachers to do more with them than surfing Web sites and sending

e-mail.

Decision in Microsoft Trial Delayed

The judge in the Microsoft Corp. antitrust trial delayed the first phase of his verdict for at least seven days on Friday.

Court officials announced last week that the judge's ``factual findings" would be issued on an upcoming Friday at 6:30 p.m. in Washington, but they didn't indicate which Friday.

Under rules adopted by the court, U.S. District Judge Thomas Penfield Jackson's office will notify government and company lawyers after the close of financial markets that a decision is about to be announced. But the lawyers won't know the outcome until it is publicly disclosed.

The court said a few copies of the findings will be available for the public and reporters at the courthouse, and electronic copies of the decision will be published by Microsoft and the Justice Department on their own Web sites.

Additionally, the court will post the findings on a Web site specially created for this purpose by the Government Printing Office, at <http://usvms.gpo.gov>.

Author Sues AOL Over Male-Mail Name

The author of a book titled ``You've Got Male" is suing America Online, alleging the Internet giant is blocking access to her Web site because the title closely resembles its e-mail catchphrase, ``You've Got Mail."

``You've Got Male" is a tongue-in-cheek reference to the perils of Internet dating.

Madelene Sabol, a relationship counselor who lives in Aurora, said AOL has been threatening her since July with a lawsuit over the title of her book.

``I was stressed out from that moment on, I just don't understand how they can really believe their word is at all similar to mine," Ms. Sabol said. ``I do all of my business through AOL, with the people who sell my book, all my communication - I am afraid that one day they are going to click me off everything."

Ms. Sabol claims AOL officials have made it difficult for people to purchase the book online by informing them the site is unavailable through the AOL server. She said company lawyers also have demanded the Web site be transferred to their authority.

Ms. Sabol's attorney James Thorburn of Elizabeth filed a lawsuit in Elbert County District Court Thursday seeking a permanent injunction and a restraining order against AOL.

America Online officials were unavailable for comment.

In September, AOL spokesman Jim Whitney said the company doesn't want customers to be confused into thinking the book is associated with AOL.

Companies Find Best Wishes In E-cards

Electronic greeting cards are free, unprofitable, and may seem impersonal, but that hasn't stopped them from becoming one of the hottest commodities in e-commerce nowadays.

Just last week, Excite@Home bought privately held Blue Mountain Arts, the leading greeting card site, for a surprisingly large sum--\$780 million in cash and stock.

At the same time, two of the industry's biggest players--Egreetings and AmericanGreetings.com--are planning to go public, having recently filed for multimillion-dollar IPOs. AmericanGreetings.com could go public as early as this week.

In addition, executives of giant greeting card companies, including ones from Hallmark, are jumping ship for Internet greeting card companies--just as in other industries.

E-cards have become popular because they are an effective way to generate traffic and acquire new customers, said Jared Schutz, executive director of Blue Mountain's online site. Although Excite@Home ended up with Blue Mountain, big players such as venture group CMGI and online toy store eToys were rumored to be interested in the company.

"All the major sites realize that greeting cards are important to their overall strategy," Schutz said. "The e-card space is a proven traffic generator."

Virtual cards, which companies such as Blue Mountain and Egreetings offer on their Web sites, typically are animated and include music. A card sender selects a card and types a message, then the e-greeting provider notifies the card's recipient via email to fetch the card at a special Web address.

Like paper greeting cards, the sites offer e-cards for all occasions; however, unlike paper ones, these are offered for free.

This can be a costly business. Egreetings, for example, lost \$12.3 million during the first six months of this year on only \$724,000 in revenue, according to regulatory filings. Although the company initially charged fees for its electronic cards, it changed course last year to offer free cards, supporting itself through advertising and other product sales.

Despite the new focus, the company projects continued losses for the "foreseeable future," according to the filing. "Our new business model is largely untested, and we cannot be sure that it will yield the results that we expect," Egreetings said. "Because the Internet is constantly changing, we may need to change our business model again to adapt to those changes."

And although Media Metrics has consistently ranked Blue Mountain as one of the top e-commerce sites in terms of traffic, its revenue has been negligible.

Gomez Advisors e-commerce analyst Hank Hudepohl said he doubts that these companies or any others will be able to charge for e-cards. "I don't see Hallmark creating a card that people will pay for when other people will give it away for free," Hudepohl said.

Companies such as Amazon.com see the cards as marketing tools. They use the cards to lure new consumers to their sites, where they can sell other products such as books, music, or gifts.

"For Amazon, the e-cards are a great way to generate traffic and to bring customers to the Amazon stores," said Eric Broussard, the company's general manager for e-cards.

Although the cards are popular, they have limitations, according to some observers. Sending someone a paper card through the mail still carries more meaning than emailing someone an e-card, said Sparks.com chief executive Felicia Lindau.

"There is nothing that will take the place of a tangible card," she said.

MSN Unveils Internet Call Waiting

People who juggle a single telephone line for Web surfing and making calls can now get an Internet version of call waiting and caller ID so they can log on and still find out if they're getting a call and who's calling.

The service, developed by Nortel Networks, is being offered to subscribers of Microsoft's MSN for an extra \$4.95 or \$5.95 per month.

MSN launched the service Thursday in Atlanta, Seattle and San Diego with plans to offer it in 50 major U.S. markets over the next several months. A similar service using the Nortel system was recently introduced in Chicago by the phone company Ameritech.

Whenever there's an incoming call while a user's computer is connected to the Internet, the service opens a pop-up window on the monitor, displaying the name and phone number of the caller.

The pop-up window offers a few alternatives if the person getting the call doesn't want to pick up the phone and end their Internet connection.

The call can be forwarded to another number such as a voice mail line or mobile phone. The user can also send a recorded or generic "call back" message to the caller. Or, if the computer is equipped for Internet telephony, the call can be answered through that machine without terminating the Web connection.

To use the service, subscribers also need to order "call forward busy" from their local phone companies, which costs from 50 cents to \$2 per month in most parts of the country, but can go as high as \$3.35 a month in California communities served by Pacific Bell.

Ameritech's monthly fee of \$6.95 includes call forward busy.

Despite the added expense, the service may be appealing to many consumers and small businesses, who might otherwise miss calls or have to pay the \$15 to \$25 a month it costs to have a second phone line.

Likewise, the high-speed Internet service called DSL, or digital subscriber line, provides a simultaneous Web and phone connection over a single phone line, but costs from \$40 to \$60 a month.

Yankee Group, an industry research firm, predicts that 10 million households will subscribe to Internet call waiting services by 2001, growing to 26 million by 2003. International Data Corp., another research firm, expects these services to generate \$400 million a year in revenues by 2003.

There is no activation fee from Nortel or MSN, which hopes to integrate the monthly charge for the service into its monthly bill. Nortel will operate the service for MSN and bill customers directly at first.

While Nortel's technology is somewhat new in this country, it has been available in Canada for more than a year.

Nortel, which usually doesn't operate the high-tech communications equipment it develops and manufactures, hopes to sell the service through numerous Internet service providers and local telephone companies.

'We're in discussions with a number of channel partners and we'll be making announcements over the next several months," said Irving Ebert, a product manager for Nortel Internet telephony products. He declined to provide further details.

Nolan Bushnell, "Father of Video Game Industry,"
Joins MetaMarkets Think Tank

MetaMarkets.com, the Web site that launched OpenFund, the world's first 'interactive mutual fund," announced that Nolan Bushnell -- the inventor of 'PONG," founder of Atari Corporation, and now CEO of uWink.com -- has joined the MetaMarkets Think Tank.

Bushnell will participate with site visitors and OpenFund's managers in online discussion boards, together with charter members of the MetaMarkets Think Tank Nicholas Negroponte of the MIT Media Lab, David Isenberg of isen.com, and Peter Sprague of Wave Systems Corporation.

MetaMarkets.com is unique among online investment discussion sites, featuring OpenFund, a no-load mutual fund managed live in real time on the Web. OpenFund shareholders and other site visitors can observe and discuss the fund's investment and trading operations in real time.

OpenFund focuses on companies that define the New Economy: the way information is used, products are sold, and innovation is fostered. MetaMarkets Investments LLC is the investment adviser of OpenFund.

'MetaMarkets.com empowers people by letting them see the investment process as it happens, and participate in that process," says Bushnell. 'In the digital age customers demand empowerment. It's just a matter of time until all financial services are offered this way."

MetaMarkets.com created its Think Tank to offer site visitors and OpenFund shareholders a valuable new perspective on investing in the New Economy. 'We are thrilled to have Nolan Bushnell join our Think Tank," said Donald

L. Luskin, President, Chief Executive Officer, and Co-founder of MetaMarkets.com. "He will add a unique perspective on the past, present, and future of the digital revolution. By inventing the video game, Bushnell is responsible for introducing the computer into the lives of ordinary people. We'll be listening closely to his views on the future of digital technologies, businesses, lifestyles, and culture."

"We're taking advantage of the opportunity to discuss New Economy trends with these leading visionaries, and taking their ideas into account in shaping our long-term investment outlook," says H. Davis Nadig, Executive Vice President and Co-founder of MetaMarkets.com. "Web-based discussion boards have made ongoing, spontaneous communication with these leading lights easy to achieve - and it perfectly fits in with our process of using the tools of the New Economy to invest in the New Economy."

The MetaMarkets Think Tank

Nolan Bushnell

Nolan Bushnell, the CEO and founder of uWink.com, Inc. is best known for bringing "PONG," Atari Corporation, and Chuck E. Cheese Pizza Time Theater to the world, and is recognized as the "Father of the Video Game Industry."

Over the past 20 years, Bushnell has founded over 20 companies, and has provided consulting services to corporations such as Commodore International, IBM, Cisco Systems, and US Digital Communications. He sits on the Board of Directors of several leading companies, including Wave Systems.

With uWink.com, Bushnell and his team intend to change the face of Internet entertainment by streaming it into public venues and establishing mass multi-player gaming tournaments worldwide.

Bushnell received his BS in Electrical Engineering from the University of Utah where he is a "Distinguished Fellow," and also attended Stanford University Graduate School. Over the years, Bushnell has received many awards of distinction, including being named ASI's "Man of the Year" in 1997 and his inclusion into the "Video Game Hall of Fame" and the Tech Museum of Innovation in San Jose, California.

Bushnell was granted patents on some of the basic technologies for many of the early video games developed and is also the inventor or co-inventor of numerous worldwide patents in various other fields and industries.

Nicholas Negroponte

Nicholas Negroponte is co-founder and director of the MIT Media Laboratory, where he is also the Jerome B. Wiesner Professor of Media Technology.

A graduate of MIT, Professor Negroponte was a pioneer in the field of computer-aided design, and has been a member of the MIT faculty since 1966. He is author of the 1995 best-seller, Being Digital, which has been translated into more than 40 languages.

In the private sector, Professor Negroponte serves on the board of directors for Motorola, Inc., and as general partner in a venture capital firm specializing in digital technologies for information and entertainment. As an active investor he has provided start-up funds for more than 20 companies, including WiReD magazine.

Most recently, Professor Negroponte helped to establish, and serves as chairman of, the 2B1 Foundation, an organization dedicated to creating a world community focused on building an imaginative, global network of all the world's children.

David S. Isenberg

David S. Isenberg, founder of isen.com, inc., spent 12 years at AT&T Bell Labs until his 1997 essay, "'Rise of the Stupid Network," was received with acclaim everywhere in the global telecommunications community with one exception -- at AT&T itself!

In 1998 Isenberg left AT&T to found isen.com, inc. He is now one of the telecommunication industry's leading disrupters. Isenberg's comments on the new telecommunications and its abundance-based business models (and other topics of technology, business and society) can be found at <http://www.isen.com>.

Peter J. Sprague

Peter J. Sprague, chairman of the MetaMarkets Think Tank, has been Chairman of Wave Systems since 1988. He was Chairman of National Semiconductor from 1965 until 1995. He sits on the boards of EnLighten Software, Inc. and Imagek, Inc. Sprague is a Trustee of the Strang Clinic; and a Member of Academy of Distinguished Entrepreneurs, Babson College.

His career as an entrepreneur has included roles with Aston Martin, Design Research, Advent, and Chemex.

Verdict Is In: Brain Is Serial Image Processor

Since the emergence of machine vision in the 1960s, debate has raged over whether a parallel or serial architecture is best. Researchers modeling visual processes in the brain observed parallelism in neural structures, but didn't know enough about how visual information was being represented to resolve the issue. Now University of Iowa researchers say they've solved this vision research question: Does the brain operate in parallel or serially?

"We are the first research group to show definitively that the human brain processes images serially-paying attention to only one object at a time and shifting rapidly from object to object," said University of Iowa professor Steven Luck. According to the new insights, the brain does perform many tasks in parallel, such as muscle coordination for walking in the park while simultaneously listening to birds chirping. These are cognitive operations that involve separate processing on different types of data.

For such diverse tasks it is clear that the brain does operate in parallel. But when it comes to tasks involving similar data items, the brain appears to time-division multiplex, that is, focus its attention on one object at a time so quickly that the conscious mind is not aware of it. "It's counterintuitive because it seems to our conscious mind that we are comparing objects simultaneously, but we now think that the brain's parallelism is similar to a computer's-that is, a computer has millions upon millions of simultaneously acting transistors, but at the functional level it is operating serially-one instruction at a time," Luck said. The

new theory says that the brain operates the same way at the functional level; it processes information serially, even though the underlying neural hardware is operating in parallel.

Luck was able to determine whether the brain's processing was parallel or serial through an experiment he performed in 1994. This experiment identified a pattern in brain waves known as N2PC, which stands for the second negative peak (N2) of the posterior contralateral (PC). The N2PC identifies the location of brain waves as emerging from either the right or left side of the brain. By arranging the experimental situation, Luck was able to use N2PC to identify whether a person was processing visual signals one at a time or simultaneously.

He enlisted the help of graduate student Geoffrey Woodman to perform the experiment and study the collected data. The experimental setup presented to subjects a landscape-shaped display of different colored blocks, most of which were black except for a red block on the left side and a green block on the right. The subjects were instructed to find the block with a nick in it and told that it was probably red but could be green. Those instructions allowed subjects to either process all blocks in parallel, focus their attention on just the red and green blocks simultaneously or search for the correct block in the same order each trial—that is, red, then green, then black.

"It was important that we knew the order in which they paid attention to the colored objects, because the N2PC works by correlating the brain waves coming from each side of the brain over many statistical trials, so we had to always have them search in the same order," Luck said. By observing the brain activity of the subjects performing the search and recognizing tasks using N2PC, Luck and Woodman discovered that the brain turned its attention from one block to the next at intervals of about 1/10th second. "There wasn't a single subject that did the task in parallel," Luck said.

Multilayer Storage Scheme Has Gbyte Potential

Building on research done at Keele University, startup Keele High Density Ltd. aims to commercialize a memory technology it says could store 2,300 Gbytes of rewritable random-access data on a device the size of a credit card. That is equivalent to an areal density of 86 Gbytes per square centimeter.

The memory system exploits the storage properties of a new family of metal alloys, said Mike Downey, managing director of Cavendish Management Resources Ltd. (London), a venture capital firm that formed Keele High Density as a joint venture with Keele University. The company plans to license the technology to computer and storage companies. Downey described the memory system as solid-state and three-dimensional, with data stored in multiple layers.

The company predicted that production costs for a 2,300-Gbyte credit-card-sized memory will be less than \$50. Keele also talked of wristwatches with a memory capacity of more than 100 Gbytes.

The technology arises from work led by Ted Williams, now an emeritus professor at Keele. Williams has applied for patents on schemes for optical, magneto-optical and multibit-per-storage-site memories that promise to raise data storage densities by a factor of 20 or more.

Ironically, Keele University closed down its electronic engineering department, where Williams worked, but now stands to earn licensing revenue from the technology developed there.

Downey said many details of the technology were being kept secret as Keele High Density enters into sensitive licensing talks with a number of computer and data-storage companies. Downey declined to name any of the potential licensees.

Downey said that the metal alloy Keele uses is akin to one being investigated at IBM Corp. "I believe IBM has demonstrated the use of up to 10 layers using a similar material, but we don't use that many [layers]," he said. "That's not the key. What Professor Williams has done is found a new way to store, retrieve and erase data."

Because the technology uses hardware from existing memory systems, he added, implementation could be done quickly and at low cost.

The quoted areal density and available optical resolution imply multibit-per-site data storage. Indeed, as Downey said, "In essence that's what we have done."

Williams confirmed the multibit-per-site nature of the storage technology but said the principle was being applied to both conventional magneto-optical materials originally developed by Philips and Sony and to a new alloy material of his own invention. Williams declined to elaborate on whether the new material displayed a magneto-optical or a different storage effect.

"We have built a crude demonstrator based on a credit-card format. We plan to build a large-scale prototype in the middle of next year with one or more licensees," said Williams. "That will be based on conventional magneto-optical material, although the principle of the invention is applicable to other modes of storage."

Although the system is described as solid-state it does require moving parts to roughly align an optical system above the storage medium and to focus the beam used for writing, reading and erasing data. Focusing is used to provide fine control of the addressing in x, y and z directions with the variable focus and transparent microscopic layers used to store data in three dimensions. The data access time for the new storage technology is predicted to be around 100 Mbytes/second.

According to the company, an additional advantage over existing data storage systems is that only 20 percent of the total capacity is needed for error correction, significantly less than the 40 percent now needed for hard disks and 30 percent for optical storage.

If the technology were to take hold, Keele predicts that it could give rise to portable computers capable of storing as much data as 350 present-day PCs. Theoretically, such systems could be on sale within two years, the company said.

Williams has a strong pedigree in technical innovation. Between 1978 and 1982 he led the team that developed the nuclear magnetic resonance imaging, or MRI, medical body scanner.

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